Public Works (1903) Department.

G.O., No. 74 I

DATED 27 Jany 1903

31/1/03

[Despatch Abstract.]

Syphon Elevator No. 7 and cost of its installation for Local.

The estimate of Rs 3,100, for purchasing a ——— sanctioned with remarks.

280/11

F.E.I.

Recd & Indexed 31.1.03

Registered

P. W. 26. 1,000—23-1-00.

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

IRRIGATION.
ACCOUNT.

Government {1903} of Madras.

PUBLIC WORKS.

Regd. } 1903.
Recd.

Enclosures

Spare copies

G.O., No. 74 I., 27th January 1903.

JANUARY.

Syphon Elevator No. 7 and cost of its installation for trial

The estimate of Rs. 3,100 for purchasing a —, sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers :—

From the Ag. Manager, South Indian Export Co. (Limited), dated 25th March 1902.
" " " " (") " 22nd April 1902.
To Superintending Engineers, dated 25th April 1902, No. 13 G.
From the Ag. Manager, South Indian Export Co. (Ld.), dated 2nd May 1902.
To the " " " (") " 7th June 1902, No. 162 M.
From the " " " (") " 11th " 1902.
To the " " " (") " 13th " " No. 175 M.
From the Superintending Engineer, I Circle, dated 16th June 1902, No. 710 G.L.
From the Ag. Manager, South Indian Export Co. (Limited), dated 17th June 1902.
" " " " (") " 23rd " 1902.
To the Superintending Engineer, I Circle, dated 24th June 1902, No. 9 I.
To the Ag. Manager, South Indian Export Co. (Ld.), dated 24th June 1902, No. 184 M.
From the " " " (") " 30th " 1902.
From the Superintending Engineer, I Circle, dated 20th Nov. 1902, No. 1284 G.L.
" " II " " 9th Oct. " " 296 W.
" " III " " 1st July " " 2173 I.
" " III " " 13th Sept. " " 3113 I.
" " IV " " 7th June " " 141 I.
" " V " " 23rd July " " 291 E.I.
" " VI " " 31st May " " 780 M.D.
From the Acting Manager, South Indian Export Co. (Limited), dated 1st September 1902.
To the Superintending Engineer, VI Circle, dated 4th September 1902, No. 80 M.D.
From the " VI " " 17th " " " 1321 M.D.
From the Acting Manager, South Indian Export Co. (Limited), dated 5th November 1902.

No. 6 I.

Note by the Chief Engineer for Irrigation.

A large extent of high level lands by the sides of several streams and channels, in which a continuous and unlimited supply is available, is at present lying waste in patches for want of economical means of raising water for its irrigation. It is considered that the method of raising water by means of "syphon elevators" given in the pamphlet received from the South Indian Export Company (Limited), is simple and suitable for the purpose and it is proposed to give the system a trial. The pamphlet having been circulated to Superintending Engineers for an expression of their opinion, the Superintending Engineers, I, IV and VI Circles, recommend a trial of the machine at certain sites. The Superintending Engineer, II Circle, is not in favour of a trial and states that the machine is costly and that it is doubtful whether the clack-valve provided in it would work properly when raising silt-laden water. The Superintending Engineer, III Circle, is of opinion that there is no reasonable probability of carrying out irrigation with profit by any of these machines in his circle. The Superintending Engineer, V Circle, is unable to suggest any suitable place where the machine can be tried. It is, however, proposed to make a trial at first near the Periyár main channel only, in order to raise water to a height of 10 feet with a gradual fall of 6 feet in a distance of from 100 to 200 feet, as it is considered that it will save the cost of lowering the high level lands and that the ryots themselves will contribute towards the cost of the machine after its usefulness has been demonstrated.

The syphon elevator No. 7 is capable of delivering about 10,720 cubic feet, or 67,000 gallons of water in 24 hours, which is sufficient to irrigate a small block of about 10 acres of land. The estimate, amounting to Rs. 3,100, for the trial of the machine with its apparatus, including descending and super-elevation pipes, is recommended for sanction as an experiment, the amount being met from the reserve* at the disposal of Government for experimental well irrigation.

* G.O., No. 973 I., dated 20th August 1902.

(Signed) A. W. SMART, Col., R.E.,
Chief Engineer for Irrigation.

22nd January 1903.

ORDER—No. 74 I., dated 27th January 1903.

The following estimate is sanctioned :—

Provincial.
Irrigation.
43. Minor Works and Navigation.
Class V. Agricultural Works.
Original Works.
Madura Division.

	RS.
Purchasing a syphon elevator No. 7 and cost of its installation for its trial	3,100

2. This sanction is registered as No. 209 I. of 1902–1903.

3. A sum of Rs. 3,100 will be placed at the disposal of the Superintending Engineer, VI Circle, from the reserve for experimental well irrigation to meet the cost of the experiment.

4. The Superintending Engineer, VI Circle, will give an early intimation of the result of the experiment for the information of Government.

(True Extract.)

Under Secretary to Government,
Irrigation Branch.

To all Superintending Engineers.
" the Chief Engineer for Irrigation.
" the Examiner, Public Works Accounts.
" the Revenue Department.
" the Financial Department.

Exd. T. K. Narayana Aiyangar.

[E. L. / 6] 4,000—12-11-00.

Public Works (190) Department

(IRRIGATION BRANCH.)

CURRENT No.

From

[Name]

[Designation] Manager, South Indian Export Co.

[Station]

No.

Dated 28 - 3. 1902.

Enclosures { Plans / Others } Total

Spare copies

Received } 25 March 1902.

Registered 1902

SUBJECT.

Forwards copy of his table showing the work done by his "Syphon Elevator" and requests to make a trial thereof in new Irrigation Work

BACK PAPERS.

FURTHER PAPERS.

The South Indian Export Company, Limited.

Madras, 25/3/02

TELEGRAPHIC ADDRESS:
XEBEC,
MADRAS.

Dear Colonel Smart,

As promised I send you herewith a copy of my table showing the work done by a No. 11. Syphon Elevator under varying conditions. As this would be the size of machine likely to be most useful in irrigation work I have not sent any other table. I trust you may see your way in one of your irrigation works to put up a trial machine as I feel sure that after testing a pump its usefulness will be more fully appreciated.

Regarding the municipal supply project could you let me have amount of water used in irrigation ~~of~~ from Redhills tank when you have received them.

Yrs. sincerely

R. S. J. Simson.

DSI

The pamphlet in subject should be circulated to I Cy.
A trial is admissible in one or two places — say in Kurnool Canal and in Upper Kistna or Godavery canals for to obtain a fair —

Aut
25/7/12

DSI

Where is the pamphlet here
25/7/12

SCB
Soon
RK

OWE
792/03

Syphon Elevator No. 11.

Delivery in gallons per 24 hours.

Fall in Metres	Delivery and Waste in gallons	Height to which water is elevated, in metres													
		From 1 m. to 2 m.	From 2 m. to 3 m.	From 3 m. to 4 m.	From 4 m. to 5 m.	From 5 m. to 6 m.	From 6 m. to 7 m.	From 7 m. to 8 m.	From 8 m. to 9 m.	From 9 m. to 10 m.	From 10 m. to 11 m.	From 11 m. to 12 m.	From 12 m. to 13 m.	From 13 m. to 14 m.	From 14 m. to 15 m.
1 m.	Delivery	396 000	356 400	316 800	237 600	198 000	158 400	118 800	.	.	.	.	.	.	.
	Waste	316 224	747 520	1 267 200	1 266 336	1 317 600	1 267 200	1 101 600	.	.	.	.	.	.	.
2 m.	Delivery	792 000	712 800	633 600	554 400	460 000	356 400	198 000	118 800	.	.	.	.	.	.
	Waste	528 720	947 808	1 267 200	1 474 560	1 318 464	1 486 080	932 544	632 448	.	.	.	.	.	.
3 m.	Delivery	1 188 000	1 029 600	950 400	792 000	712 800	554 400	396 000	316 800	277 200	261 600	237 600	213 840	182 160	158 400
	Waste	528 480	716 128	1 264 032	1 409 760	1 607 040	1 507 068	1 241 488	1 124 760	1 108 224	1 139 776	1 164 096	1 139 040	1 056 960	987 840
4 m.	Delivery	1 584 000	1 267 200	1 128 200	1 168 800	950 400	748 000	676 000	639 600	554 400	559 200	490 400	475 200	452 000	424 400
	Waste	522 720	836 058	1 178 800	1 474 560	1 577 664	1 444 000	1 493 992	1 549 680	1 663 200	1 711 872	1 797 120	1 900 800	1 951 487	2 026 368
5 m.	Delivery	1 782 000	1 584 000	1 504 000	1 364 400	1 187 000	950 400	791 200	792 000	748 800	712 000	672 800	633 600	592 800	554 400
	Waste	473 760	844 128	1 203 840	1 485 104	1 570 464	1 526 640	1 583 286	1 686 816	1 304 032	1 872 160	1 977 120	2 121 184	2 040 640	2 056 896
6 m.	Delivery	1 980 000	1 782 000	1 697 600	1 584 000	1 381 600	1 152 800	1 108 800	992 600	950 400	869 600	792 000	751 200	712 800	672 800
	Waste	435 248	787 392	1 133 856	1 409 760	1 534 464	1 539 648	1 718 496	1 756 464	1 900 800	1 930 753	1 877 920	1 976 256	2 157 776	2 091 168
7 m.	Delivery	2 178 000	1 980 000	1 821 600	1 742 400	1 584 000	1 346 800	1 311 200	1 188 000	1 108 800	1 029 600	919 600	950 400	871 200	792 000
	Waste	413 568	752 256	1 058 240	1 324 224	1 520 640	1 576 560	1 707 552	1 785 392	1 917 136	1 963 584	2 077 344	2 176 416	2 160 576	2 114 496
8 m.	Delivery	2 376 000	2 178 000	1 980 000	1 900 800	1 663 200	1 540 800	1 504 800	1 350 400	1 267 200	1 118 000	1 108 800	1 029 600	950 400	909 600
	Waste	396 576	725 184	989 856	1 265 760	1 379 232	1 543 680	1 758 456	1 830 816	1 900 800	1 989 920	2 028 960	2 036 320	2 052 864	2 117 088
9 m.	Delivery	2 574 000	2 376 000	2 173 600	2 059 200	1 742 400	1 786 400	1 704 900	1 584 000	1 425 600	1 326 400	1 267 200	1 188 000	1 108 800	1 029 600
	Waste	379 584	657 606	766 816	1 118 816	1 289 376	1 571 528	1 756 544	1 769 120	1 845 904	1 990 368	2 052 864	2 114 496	2 128 896	2 131 200
10 m.	Delivery	2 772 000	2 613 600	2 376 000	2 217 600	1 821 600	1 950 000	1 900 800	1 716 000	1 584 000	1 504 800	1 425 600	1 346 400	1 267 200	1 188 800
	Waste	369 540	695 232	750 400	1 181 952	1 212 192	1 532 848	1 773 216	1 806 860	1 900 800	2 003 904	2 064 216	2 154 240	2 196 000	2 215 736

[E. I. / 5] 4,000—22-11-00.

1

Public Works (1902) Department

(IRRIGATION BRANCH.)

CURRENT No. 174 M.

From

[Name]

[Designation] Ag. Manager, The Porto Indian Export Co. Ld.

[Station] Madras

No.

Dated 22nd April 1902

Enclosures { *Plans* / *Others* 6 } *Total* 6

Spare copies

Received 23rd April 1902

Registered 23rd April 1902

SUBJECT.

Syphon Elevator

Forwarding six type-written copies of the pamphlet referring to —— and promising to send the 7th pamphlet asked for.

BACK PAPERS.

E. J.

Circulate to S.Es for report as to where trial may be made of these syphon elevators - Irrigation [illegible] should be taken of [illegible] [illegible] [illegible]

FURTHER PAPERS.

R.G.1 M.S. 2.5.02

The South Indian Export Company Limited.

Address for Telegrams,
Xebec
Madras.

Madras 22nd. April. 1902.

The Chief Engineer for Irrigation,
P.W. Secretariat,
Chepauk, M a d r a s.

Sir,

With reference to your letter of the 27th. March we have ~~the~~ pleasure in sending you herewith 6 type-written copies of the pamphlets referring to Syphon Elevator. We regret that we have been so long in complying with your request but owing to our stock of printed pamphlets having been exhausted we were unable to comply with your request immediately. The 7th. pamphlet which you ask for shall be sent shortly. We have added at the end of the pamphlet a table showing the work done under various conditions by No.11 Syphon and we trust this will be of interest to you. We shall be extremely glad to give you any information we can regarding the machine if there are any points in the pamphlet not fully explained. As we have personally informed you the Machine is perfectly simple and trustworthy in working and has a higher efficiency according to expert opinion than any other Hydraulic Machine known.

We have the honour to be,

Sir,

Your obedient servants,

THE SOUTH INDIAN EXPORT Co., Ld.,

[signature]

Ag Manager.

R.S.

Forwarding ... the ... has ...

Public Works (190 2) Department

IRRIGATION BRANCH.

ISSUE No. 139

To
~~The~~ All Supg Engrs

(Reply to letter No. , dated

Dated 25 April/02
Despatched 30 do
Enclosures *

* Particulars of Enclosures.

SUBJECT.

Syphon Elevator to [illegible]
Circulating pamphlets
referring to — for SEs
opinion

B. I. Form No. 13—1,000— 9-3-02.

BACK PAPERS.

No.	Date.

Sent to Government with No. I.,

dated 190 .

Printed with G.O., No. I.,

dated 190 .

REMINDERS ISSUED.

No.		dated	
No.	1,	dated 8-9	1902. 8/1/2
"	2	"	
"	3	"	
"	4	"	
"	5	"	

KEEP-WITHS.

FURTHER PAPERS.

No.	Date.
R191 m	2-5-02
R89 m/d	31-5-02
R49 C8	11-6-02
R24 I	17-6-02
R49-III	16-7-02
R28 II	9-10-02
R37-II	24-7-02
R36-III	3-7-02

2013-G

Letter from the Manag[er]
South Indian Export
Company Limited.

Circulated to Sup[erintending]
Engineers of circle[s]
for report as to where
trial may be ma[de]
of these syphon Elevat[ors]
2. Irrigation of small
patches of high lan[d]
near suitable falls
may be profitable
their means.

A.M.
25/4/02

with fair copies
of Circular within

Desd. 30/4/02

B.P. 1 P.M. ...
B.P. ...
...
... 17 ...
...
...
...
...

To
The Supg. Engrs. } with one copy of
1-2-3-4-5 & 6 Circles } pamphlet.

Public Works (1902) Dept.

IRRIGATION BRANCH

20/13

Letter from the ... Company Limited.

In Circular ... suggests ... report as to whether this may be ... those system ... irrigation ... installation ... near available ... may be prefer... this means.

Copy of the pamphlet ...

2 . 5 . 1902

Re ... with one copy ... 1.2.3.4. ... pamphlet.

3

4,000—22-11-00.

Public Works (1902) Department

(IRRIGATION BRANCH.)

Letter from the South Indian Export Company Limited

CURRENT No. 191 M.

From

[Name] The South Indian Export Co Ld

[Designation] Circulate to Chief Engineers for report as to whether trial may be made of these Syphon Elevators in irrigation of lands situated high & where suitable for them & may be profitable

[Station] Madras

No. "

Dated 2. 5. 1902

Enclosures { Plans / Others 1 } Total 1

Spare copies

Received 3. 5. 1902

Registered 3. 5. 1902

SUBJECT.

Syphon water Elevator — forwarding the copy of the pamphlet on —

BACK PAPERS.

6 copies of the pamphlet have also been circulated to the S.E.s to the office no. 13 G. of 25-4-02. ... this current may be recorded

FURTHER PAPERS.

R 89 m 2. 3r. 5 02

The South Indian Export Company Limited.

Address for Telegrams,
Webec.
Madras.

Madras 2nd. May. 1902.

The Chief Engineer for Irrigation,

P.W. Secretariat,

Chepauk, Madras.

Sir,

We have the honour to send you herewith the 7th copy of the pamphlet on Syphon Water Elevator as promised in our letter of the 27th Ulto.

We have the honour to be,

Sir,

Your obedient servants,

THE SOUTH INDIAN EXPORT Co., Ld.,

[signature]

Ag. Manager.

R.S.

CHIEF ENGINEER
FOR IRRIGATION.

3 MAY. 1902

No. 191. m

THE SOUTH INDIAN EXPORT COMPANY LTD.
MADRAS

THE SOUTH INDIAN EXPORT COMPANY, LIMITED. MADRAS.

SYPHON WATER ELEVATOR.

(Patented in all countries)

FOR THE

AUTOMATIC RAISING OF WATER.

From Wells, Streams, Springs, Etc.

---oOo---

S Y P H O N   E L E V A T O R.

(Patented in all countries).

——o0o——

As its name indicates, this apparatus is based upon the principle of the Syphon, an
is devised in such a manner as to open a vast field for its application.

Instead of merely drawing off liquids to a lower level, like the ordinary Syphon
the Syphon Elevator is an automatic machine for elevating water, which, under favou
conditions, is endowed with great power.

By a special device, a portion of the water that passes through the Syphon escap
at the top, while the rest continues its course down the descending pipe in an uni
rupted flow, without allowing the apparatus to empty.

It is really an Automatic Pump which acts without any accessory power, its oper
depending upon the forces of gravity and atmospheric pressure.

When adapted for discharging water from the top of the Syphon (which, for want
better term, is called Direct Elevation) it may be considered as a Suction Pump.

In its adaptation for elevating water higher than the top of the Syphon (called
Super Elevation) it is both a Suction and Force Pump.

The Syphon Elevator is composed of the following parts (Fig.1):-

Distributor B, Regulator R, Receiver H, and

Two pipes (M and D), called respectively the ascending pipe (short and descending pipe (long leg).

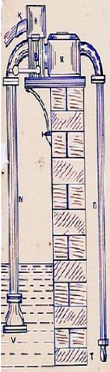


FIG.1.

In the interior of the Distributor is a steel clack valve. On t a poppet valve. The accessory parts, which are for regulating the ratus, are on the exterior.

The Distributor, Regulator, and Receiver are of cast iron, whil pipes may be of iron, lead or brass.

At the bottom of the ascending pipe (M) is a check valve (V), wh allows of the ingress of water while the apparatus is in operation prevents its escape when not in operation. On the descending pipe is a stop-cock (not shown in Fig.1).

An essential condition for the installation of the Syphon Eleva is that there be a fall, or difference of level between the surfa water from which the supply is drawn, and the point where the des ing pipe terminates.

This fall may be either vertical, as shown in Fig.2 (a b), or considerable distance, as in Fig. 3 (a b).

O P E R A T I O N.

In the first place, the Syphon Elevator must be filled with water ; but this does
require to be repeated, as the apparatus does not empty when stopped.

It can be filled through the Regulator, after removing the cap and closing the st
cock on the descending pipe. When filled, the cap should be replaced and carefully
ened down by the screw-clamp in order to ensure its being air-tight.

To start the Syphon Elevator, it is only necessary to o
the stop-cock on the descending pipe.

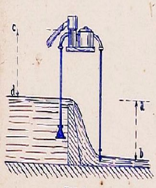


FIG.2

The phenomenon which occurs at the moment of starting i
identical to that of the ordinary Syphon. When the stop-c
on pipe D is opened the water in the Syphon is subjected t
atmospheric pressure, with which it seeks equilibrium. The
fore, as the water falls in pipe D (Fig.1) it ascends in p
M and rushes into the Distributor B, where, meeting the op
clack-valve, it forces the same forward and closes it. Its
exit being thus cut off in the direction of the descending
pipe, the water, by its momentum, forces open the poppet-valve and escapes into the
ceiver(H), whence it may be run off to the desired point.

While the clack-valve is closed a partial vacuum occurs in the Regulator (R), o
to the continuous outflow which is maintained therefrom through the descending pipe

But meanwhile the escape, of water through the poppet-valve relieves the pressu

the clack-valve, which is thrown open by its own weight the very instant the poppet-valve closes, thus re-establishing the conditions of an ordinary syphon.

The same phenomena recur with perfect regularity, so that the escape of water by opening of the poppet-valve is repeated at the rate of from 100 to 600 times a minut resulting in a virtually continuous delivery of water into the receiver H, whence ar

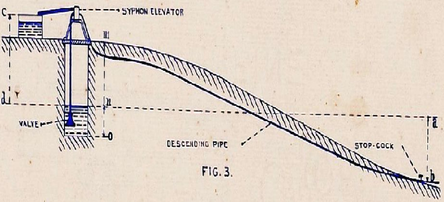


FIG. 3.

uninterrupted flow is maintained to a reservoir, or to the place where it is to be utilised.

As abovementioned, the Syphon Elevator is arranged either for Direct Elevation Super Elevation. Figs.1,2, and 3 show the former, which is limited to suction height (practically about 26 to 28ft.). The latter is for the elevation of wa exceeding that height, and is illustrated by Figs.4,5,6, and 7. The importance Super Elevation merits particular attention, as it permits of applications whi

no other automatic hydraulic apparatus is capable of, owing to the principle upon whic the operation of the Syphon Elevator depends. Such, for example, as Figs.4,5,6, and 7

Fig.2 shows a stream that has been dammed in order to obtain the difference of level (a b).

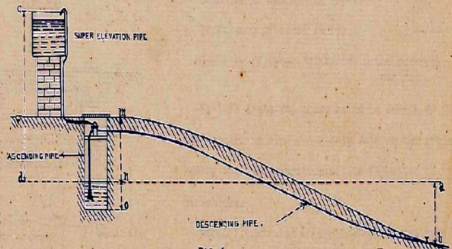


FIG.4

Fig.3 illustrates Direct Elevation from a well on a hillside, where the descendin pipe is carried to a distance for the purpose of reaching a lower level than the surface of the water in the well (a b).

Fig.4. shows similar conditions to No.3, but applied to Super Elevation. To cite particular installation of this kind, a No.3 Syphon Elevator is raising water from a

well under the following conditions:-

Height from the water to the top of the well(mn)2

Total height from water to the reservoir(c d), 8

Length of descending pipe, " " 178

" Superelevation pipe, ---- 88

Diameter of descending pipe. ----

Difference of level (a b), ---- 2

Quantity of water delivered in the reservoir per day --- 400

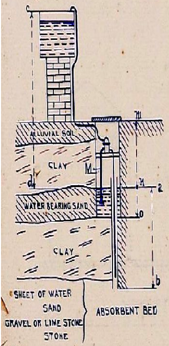


FIG.5.

In this instance, there being no danger of frost, the descending pipe was merely laid on the ground, following the irregularities of its formation in various directions.

Fig.5 illustrates an application of the Syphon Elevator on level ground, where the essential condition, viz. the difference of level (a b), has been artificially created by a tubed boring through the bottom of the well itself to a lower stratum of absorbent gra which allows of the escape of the motive water from the descending pipe.

Whenever such installations have been practicable, excellent results have been obtained.

Installations of this kind may be made where there is a substratum of absorbent material, such as gravel, sandy chalk etc., sufficiently porous to permit of the per the colation of water from the descending pipe.

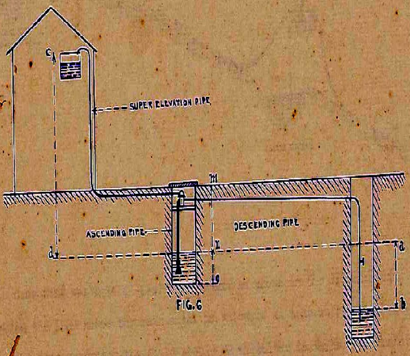


FIG.6

Fig.6 shows an application for utilising the difference of level which sometimes ex between neighbouring wells (a b).

Fig.7 represents an irrigation canal, such as one leading from the great Nile Da
now being constructed, or similar irrigation works; the descending pipe irrigates t
land below the level of the main canal, while the water so used acts as motive power

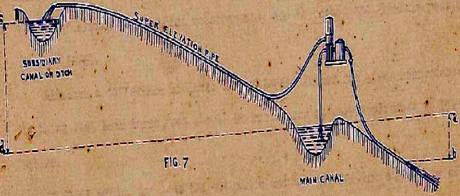


FIG. 7

for elevating water to a subsidiary canal, as shown in the illustration, thereby
making the land above the main canal as valuable as that which lies below it.

For this use alone the field should be unlimited in Egypt, the Transvaal, and t
British Colonies.

The installation of the Syphon Elevator is most simple. A light support is suf
cient for the smaller sizes, and in many cases existing structures can be used
All apparatus are tested before being sent out, and are adjusted to the condi

under which they are to be set up.

The height to which water has been raised by actual installations exceeds 100

without that being considered the limit.

The efficiency of the Syphon Elevator is very high. As the volume of water de

vered is in the inverse ratio of the height to which it is elevated (c d), and in

direct ratio of the difference of level (a b), it is always desirable to limit the

height of elevation to strict requirements, and to obtain the greatest possible di

ence of level.

Although a difference of level of but twenty inches has given appreciable res

anything less than three feet should be considered as only applicable to Direct E

vation.

In other words, the less the elevation and the greater the difference of leve

the larger the volume of water delivered, and consequently the smaller the size o

Syphon Elevator required.

According to the size of the apparatus and the conditions of its installation

Syphon Elevator will elevate from 100 gallons to 2,000,000 gallons of water in tw

four hours.

The Syphon Elevator works without interruption, and requires neither supervis

nor attention. It may be stopped for as long a time as desired, and started agai

merely opening the stop-cock.

In case it should be desired to empty the apparatus, it can be done by unscre

a screw-plug at the top of the Regulator, and opening the stop-cock and check-val

The different parts which compose the Syphon Elevator are of the same pattern f
each size, and can readily be replaced.

It is absolutely essential that the apparatus itself and the ascending and des
ing pipes have air-tight joints.

Repairs.- Repairs are confined to new rubber packings for the valves; as these
always kept on hand anyone can put in a new one in a few minutes. As a rule, this
not require to be done oftener than once a year.

Valves.- These are of the simplest form, and, as they strike against rubber se
are indestructible.

Pipes.- The pipes for the smaller sizes may be of lead, iron or brass. For th
larger sizes they are of iron tubing, cast iron or galvanised sheet-iron. Their di
vary from half an inch to two feet.

Hundreds of Syphon Elevators are in use in France and other countries, althoug
apparatus has never been advertised up to the present time.

Among the advantages of the Syphon Elevator are the following, under certain w
defined conditions:-

1. It will raise water to a considerable height without the aid of other moti
power than that developed by its syphonic action, which replaces hand-work,
horse-power, steam-power, etc.
2. It is absolutely automatic, requiring neither attention nor lubrication.
3. There is no limit to the volume of water to be raised.
4. It gives greater efficiency than any other automatic hydraulic apparatus.

5. It can be regulated according to water supply, difference of level and elevation.

6. It is extremely simple and strong in construction, and can be fixed above o below ground to suit conditions.

7. It is moderate in cost, and inexpensive in erection. It will go on working f years at practically no expense.

8. The working parts of the Syphon Elevator are all at the top, where they are accessible.

The Syphon Elevator is applicable for raising water for:-

Domestic purposes in mansions, hotels, public buildings, fire hydrants, stable farm supply.

House-to-house supply in small towns and villages, flushing sewers and street watering.

Irrigation, locomotive tanks at railway stations.

The rise and fall of the sea or river tide can often be utilised to great advantage. Wherever in conjunction with a considerable tidal variation t exists the means of storing the tidal water, the Syphon Elevator will be c great use in raising water for municipal or other purposes.

There are many places on the Sea Coast in England and Scotland where for water roads, flushing sewers, sea baths, etc., he use of this apparatus would t tended with great economy and saving of ates.

Full information and estimates will be furnished upon application either by let

or in person.

All installations made by the Syphon Elevator Syndicate Ltd., guaranteed.

All accessories, such as pipes, reservoirs, etc., furnished when desired.

Syphon Elevator No 11
Delivery in Gallons

[Di]fference of level or fall in Metres		Heights of Elevation, in Metres. From 1m to 2m	From 2m to 3m	From 3m to 4m	From 4m to 5m	From 5m to 6m	From 6m to 7m	From 7m to 8m	From 8m to 9m	From 9m to 10m	From 10m to 11m	From 11m to 12m	From 12m to 13m	From 13m to 14m	From 14m to 15m
1m	Delivery	396,000	356,400	316,800	237,600	198,000	158,400	118,880							
	Waste	526,464	947,520	1,267,200	1,236,336	1,317,600	1,267,200	1,101,600							
2m	Delivery	792,000	712,900	633,600	554,400	440,000	356,000	198,000	118,800						
	Waste	522,490	947,808	1,267,200	1,474,580	1,318,464	1,486,080	930,544	682,418						
3m	Delivery	1,118,000	1,029,600	950,400	792,000	712,000	554,400	396,000	316,800	277,200	261,600	237,600	213,840	182,160	158,400
	Waste	528,480	916,128	1,264,082	1,405,760	1,607,040	1,507,080	1,261,388	1,154,760	1,108,224	1,158,770	1,164,096	1,109,040	1,053,860	989,800
4m	Delivery	1,574,000	1,267,200	1,188,800	1,109,800	990,400	748,000	676,000	597,600	554,400	559,200	690,400	475,200	462,000	434,400
	Waste	522,730	836,352	1,183,000	[illegible]	1,544,664	1,444,000	1,492,002	1,739,680	1,663,800	1,711,872	1,799,120	1,900,800	1,957,488	2,026,868
5m	Delivery	1,782,100	1,584,000	1,504,200	1,266,400	1,188,000	950,400	871,200	792,000	748,000	712,000	673,800	633,600	692,800	654,400
	Waste	473,760	844,128	1,203,840	1,425,264	1,570,464	1,510,660	1,592,406	1,691,818	1,804,032	1,893,160	1,994,120	2,04?,186	2,069,640	2,056,896
6m	Delivery	1,980,000	1,782,000	1,647,600	1,584,100	1,381,600	1,152,900	1,108,900	993,600	980,400	869,600	797,000	757,200	712,800	692,800
	Waste	426,248	747,842	1,133,956	1,449,763	1,531,161	1,539,629	1,715,456	1,763,464	1,800,800	1,930,750	1,997,990	1,976,256	2,059,176	2,091,168
7m	Delivery	2,178,000	1,980,000	1,821,600	1,742,400	1,584,000	1,344,800	1,311,200	1,188,000	1,108,800	1,029,600	989,600	950,400	871,290	792,000
	Waste	413,568	763,858	1,038,240	1,324,224	1,526,660	1,546,561	1,417,652	1,795,392	1,907,136	1,968,584	2,044,344	2,146,416	2,160,596	2,114,496
8m	Delivery	2,376,000	2,178,100	1,980,000	1,900,800	1,663,200	1,648,800	1,504,800	1,357,400	1,267,201	1,180,000	1,108,800	1,029,600	950,400	909,600
	Waste	396,576	725,124	999,057	1,265,760	1,379,232	1,573,681	1,734,651	1,838,816	1,900,800	1,959,920	2,028,960	2,058,320	2,057,360	2,117,088
9m	Delivery	2,574,000	2,376,000	2,173,600	2,059,200	1,747,400	1,786,000	1,704,000	1,584,010	1,425,600	1,326,400	1,267,200	1,188,000	1,109,800	1,029,600
	Waste	379,584	507,610	966,216	1,145,816	1,299,376	1,578,528	1,765,644	1,869,120	1,995,994	1,990,369	2,057,064	2,114,496	2,128,896	2,131,200
10m.	Delivery	2,772,000	2,613,600	2,376,000	2,217,600	1,821,600	1,980,000	1,900,800	1,784,000	1,584,000	1,624,801	1,426,600	1,346,400	1,267,200	1,188,600
	Waste	360,860	695,267	950,404	[illegible]	[illegible]	1,687,948	1,773,216	1,806,660	[illegible]	[illegible]	2,164,216	2,153,140	2,196,030	2,215,936

Public Works (1902) Departm

IRRIGATION BRANCH.

ISSUE No. 162 M

To

The Manager South
Export Company
Madras

(Reply to letter No. , dated

Dated 7. 6. 0
Despatched 9. 6. 02
Enclosures *

* Particulars of Enclosures.

SUBJECT.

Syphon eleva
to forward an esti
specification for
200.000 gallon
to a height of 10
available fro

…PERS.

No.	Date

…ent to Government with No. I.,

…dated 190 .

…ted with G.O., No. I.,

… 190 .

REMINDERS ISSUED.

…dated 190

…EEP-WITHS.

FURTHER PAPE…

No.	Date
R4909	11-6-02
R2634	11-6-02
R9794	21-6-02
R0074	29-02

No 162 M. of 7-6-02

To The Manager,

South Indian Export Company

Madras.

Sir,

With reference to correspondence ending with your letter dated 2nd May 1902, I have the honour to request that you will be so good as to forward an estimate with specification for a syphon elevator to [illegible] 200000 gallons of water p[illegible] to a height of 10 feet w[illegible] an available fall of [illegible]. The elevator is proposed [illegible] be tried on the Periya[illegible] Canal for the irriga[illegible] high level lands.

[illegible]

[E. L. / 5] 4,000—19-8-02.

2

Public Works (1902) Department

(IRRIGATION BRANCH.)

CURRENT No. 2536

From

[*Name*]

[*Designation*] The South Indian Export Co.

[*Station*] Madras

No. —

Dated 11 6 1902

Enclosures { *Plans* / *Others* } *Total*

Spare copies

Received } 11 6 1902

Registered } 1902

SUBJECT.

Syphon Elevator. Requesting with reference to be furnished with certain information

Self —

BACK PAPERS. 2080.

	U.O. to the Ex. Engineer for report as to the kind of Syphon Elevator he requires (Sd.) [illegible]

FURTHER PAPERS.

Recd. 2/13 [illegible]	Dep[illegible]

The South Indian Export Company, Limited.

Address for Telegrams,
Kelsec.
Madras.

Madras 11th. June. 1902. 189

The acting Chief Engineer for Irrigation,

Madras.

Sir,

We are in receipt of your letter No.162 M. dated the 7th.inst. for which we are much obliged. With reference to your enquiry for a Syphon Elevator to raise 200,000 gallons of water per day to a height of 10ft. with an available fall of 6 ft., will you kindly let us know if the available fall is a sudden drop or if the long leg of the Syphon would have to be carried over some considerable distance to obtain the fall. In this latter case what is the distance over which the leg of the Syphon would have to be carried? If possible could you give this information before tomorrow as we wish to write by tomorrow's mail and obtain a complete Specification for the machine.

From tables in our possession we estimate that a No.9 Syphon Elevator would be the correct machine to raise 200,000 gallons of water in 24 hours besides allowing a margin of about 80,000 gallons in case more water is required or to allow for any variation in fall. In this case we estimate that we could deliver the machine to you at a cost of between Rs.3000 & Rs.4000, but as we wish to have our figures confirmed from the London Office, where accurate calculations can be made up and Specifications drawn out, we only give these figures as approximate.

We shall reply therefore to your letter completely in about Six Wee[ks]
we hope.

We are very glad indeed that you proposed to try a Machine and feel sure that the result will be satisfactory. We shall do everything in our power to ensure success.

We have the honour to be,

Sir,

Your obedient servants,

THE SOUTH INDIAN EXPORT Co.,Ld.,

P.S.

Ag. Manager.

2263 MI
11. 6. 02

OWG
19/7/03

Public Works (1902) Department

IRRIGATION BRANCH.

ISSUE No. 175 m

To

The Manager South In[dian]
Export Co.
Madras

(Reply to letter No. , dated

Dated 13. 6 02
Despatched 16 6 02
Enclosures *

* Particulars of Enclosures.

SUBJECT.

Syphon Elevators
Requesting to be informed
what description of
and what length of pipe
are in stock in Kingdom

E. I. Form No. 13—4,000— 9-3-02.

BACK PAPERS.

No.	Date.
R49 C8/02	

Sent to Government with No. I.,
dated 190 .
Printed with G.O., No. I.,
dated 190 .

REMINDERS ISSUED.

No.	1,	dated	190 .
"	2	"	
"	3	"	
"	4	"	
"	5	"	

KEEP-WITHS.

FURTHER PAPERS.

No.	Date.
R 24-I	17-6-02
Regd/24-6-02	

No 175 W

To The Manager, South Indian
Export Company
Madras.

Sir,

I have the honour to request that you will be so good as to inform me what description of syphon elevators and what length of pipes you have in stock in Madras.

13/6/12

Stock Form No.
8,000—7-4-02.

Public Works (190) Department.

CURRENT No. 24 I

From

[Name] W. C. De Morgan Esquire Mr. I.C.E.

[Designation] Superintending Engineer 1st Circle

[Station] Waltair

No. 710 G.L.

Dated 17 June 1902

Enclosures { Plans / Others } Total.

Spare copies

Received } 19. 6. 02 190 .

Registered 190 .

Passed on, by—

Registering Clerk 190 .

U. R. Clerk 190 .

Referencer 190 .

Record Supdt. 190 .

Drafting Officer 190 .

SUBJECT

Trial of the Syphon elevator. Informing that — may be made ~~at~~ ~~[illegible]~~ lock [illegible] in the three Godavary Deltas.

BACK PAPERS.

Papers

FURTHER PAPERS.

9 9-II/02

[V. C. P.—No. 242—9-1-1902.—500.]

Superintending Engineer's Office, I Circle,
Waltair / Camp 16/17 June 1902.

No. 710 G L

FROM

W. C. De Morgan Esq. [illegible]
SUPERINTENDING ENGINEER
FIRST CIRCLE.

To

THE CHIEF ENGINEER
FOR IRRIGATION.

Enclosures.

Ref. No. 13 G of 25.4.02.

SIR,

Referring to above, I ha[ve] the honor to inform you that trial[s] of the Syphon Elevator may be made at suitable lock weirs in the three Godavari Deltas & I prop[ose] that one elevator be sent to the Executive Engineers of Godavari Ea[st]ern, Godavari Central and Go[da]vari Western Divisions and tria[ls] will first be made of them at Ra[...] Chopella and Nedapad Lock weir[s]. If a vacuum is easily mainta[in]ed, they should prove useful.

2. Please let me know whether any m[...] pamphlet [...]

anticipation of printed Copies, Divisional officers have not taken Copies.

I have the honor to be

Sir,

your most obdt. Servt.

16.6.02

W D Morgan

Superintending Engineer,

[illegible] Circle

CHIEF ENGINEER FOR IRRIGATION.
19 JUN. 1902
No.

[E. I. / 6] 1,000—19-3-02.

10

Public Works (1902) Department

(IRRIGATION BRANCH.)

CURRENT No. 291. M

From

[Name]

[Designation] The Manager

[Station] S. I. Export Co. Madras

No. "

Dated 17. 6. 1902

Enclosures {Plans / Others} Total

Spare copies

Received 21. 6. 1902

Registered 23. 6. 1902

SUBJECT.

Syphon elevator — requesting certain information in connection with the —

BACK PAPERS.

E.I. for orders.

J175 M/02

R 24-I/02 file is received with ...

FURTHER PAPERS.

The South Indian Export Company Limited.

Address for Telegrams:
Kebec.
Madras.

Madras 17th. June. 1902

The Ag. Chief Engineer for Irrigation,

O o t a c a m u n d.

Sir,

In reply to your letter No.175 M, enquiring what description of - Syphon Elevators and what length of pipes we have in stock in Madras we beg to state that we have at present only the small demonstration Syphon Elevator (Size No.2) which was erected in Madras, while we have at the - moment no stock of pipes. We can however very easily obtain machines - from England if required and could even cable for these if necessary. - We have not up to now kept any stock in Madras as it is only recently - that anybody has shown interest in the machine in this presidency and - asked us for quotations . If however in future we find there is sufficient demand to warrant our keeping a stock here we shall certainly do so. In point of fact if we found it desirable we should probably manufacture - the machines in India. We shall be glad to receive any orders you may - have for us and shall do our best to execute them with as little delay as possible. In any future enquiries which you may make will you kindly - state whether the fall available is an abrupt one or spread over some - distance and in the latter case over what distance ; it will of course be obvious to you that if the fall is a prolonged one a certain amount of allowance has to be made for friction in the pipe.

We have the honour to be, Sir,
Your obedient servants,
THE SOUTH INDIAN EXPORT Co., Ld.,
[signature]
Ag. Manager

Madras R.S.

Public Works (1902) Department
IRRIGATION BRANCH

17th. June. 1902.

The Ag.Chief Engineer for Irrigation,

Ootacamund.

Sir,

In reply to your letter No.175 C. enquiring what description of Syphon Elevators and what length of pipes we have in stock in Madras we beg to state that we have at present only the small demonstration Syphon Elevator (Size No.2) which was erected in Madras, while we have at the moment no stock of pipes. We can however very easily obtain castings from England if required and could even cable for these if necessary. We have not up to now kept any stock in Madras as it is only recently that anybody has shown interest in the machine in this presidency and asked for quotations. If however in future we find there is sufficient demand to warrant our keeping a stock here we shall certainly do so. In point of fact, if we found it desirable we should probably manufacture the machines in India. We shall be glad to receive any orders you may have for us and shall do our best to execute them with as little delay as possible. In any future enquiries which you may make will you kindly state whether the fall available is an abrupt one or spread over some distance and in the latter case over what distance; it will of course be obvious to you that if the fall is a prolonged one a certain amount allowance has to be made for friction in the pipe.

We have the honour to be, Sir,
Your obedient servants,
THE SOUTH INDIAN EXPORT Co.

2 13

[E.C. / 1] 1,000—12-3-02.

Public Works (1902) Department

(IRRIGATION BRANCH.)

CURRENT No. 292. m

From

[*Name*]

[*Designation*] The Manager, S. I. Export C

[*Station*] Madras.

No. –

Dated 21. 6. 1902.

Received 23. 6. 1902

Enclosures { *Plans* / *Others* 11 } *Total* 11 pamphlets.

Registered 23. 6. 1902

Spare copies

2 pamphlets are retained at office

SUBJECT.

Syphon elevator — forwarding certain copies of pamphlets of the —

BACK PAPERS.

SCB

Previous papers are now with M.S.T.

The South Indian Export Company Limited.

Address for Telegrams
Xebec.
Madras.

Madras 21st. June. 1902.

The Ag. Manager,

Office of the Chief Engineer for Irrigation,

Chepak, Madras.

Sir,

In reply to your letter of the 19th inst. we have the honour to send you herewith Copies of the Pamphlet of the Syphon Elevator - asked for.

We have the honour to be,

Sir,

Yours faithfully,

THE SOUTH INDIAN EXPORT Co., Ld.,

[signature]

Ag. Manager.

R. G.

CHIEF ENGINEER
FOR IRRIGATION.
25 JUN. 1902
No. 292-M

25 6 02

73

Public Works (1902) Department

IRRIGATION BRANCH.

ISSUE No. 9-I

To

The Supg Engr. I

(Reply to letter No. , dated

Dated 24 6 02

Despatched 25 6 02

Enclosures * 4

* Particulars of Enclosures.

SUBJECT.

Syphon Elevator. S.E. requested to report what area he proposes to irrigate in the places mentioned with full quantity of water available for working the

P. I. Form No. 19—4,000—19-8-02.

BACK PAPERS.

No.	
R 24-I/02	

Sent to Government with No. I.,

dated 190 .

Printed with G.O., No. I.,

dated 190 .

REMINDERS ISSUED.

No. 1, dated 18. 10. 1903.

" 2 "

" 3 "

" 4 "

" 5 "

KEEP-WITHS.

FURTHER PAPERS.

No.	Date.

Regd [illegible]

2 deposits

memo No. 9-I

Enclos 4

With reference to letter No. 710 G. L dated 17th June 1902 from Supg Engineer, I Circle, the undersigned has the honour to request that the Supg Engineer will be so good as to report what area he proposes to irrigate at each place mentioned therein with full quantity of water available for working the Elevator. Without this information it is impossible to know what size of Elevator should be obtained. ~~One more copy~~ Four copies of the pamphlet referring to Syphon Elevator are hereunto forwarded.

[signature]
24/6/02

To,
The Supg Engineer I Circle.

No. 9 I

With reference to letter No. 710 F. A. dated 17th June 1903 from Supdg Engineer, I Circle, the undersigned has the honour to request that the Supdg Engineer will please agree as to report what area the [Syphon] discharge [would] irrigate at each place mentioned therein with full quantity of water available for working the Elevator.

Without this information it is impossible to know what size of Elevator should be obtained. Two copies of the pamphlet referring to Syphon Elevators are herewith forwarded.

Enclos 4

Syphon Elevator stating what ... to discharge ... 24 feet ... [illegible] ... available ... [illegible]

To the Supdg Engr I Circle.

R97 [illegible]

PWE 12 / 797/03

16

Public Works (1902) Department

IRRIGATION BRANCH.

ISSUE No. 184 M

To

The Manager
South Indian [illegible]
Co.
Madras

(Reply to letter No. , dated

Dated 24 . 6 . 02

Despatched 25 6 02

Enclosures *

* Particulars of Enclosures.

SUBJECT.

Syphon Elevator. Stating that in the case of one proposed to be tried on the Periyar Main Canal, the fall is available in a total length of 100 feet.

I. Form No. 18—1,000—19-3-02.

BACK PAPERS.

No.	Date.

Sent to Government with No. I.,

dated 190 .

Printed with G.O., No. I.,

dated 190 .

REMINDERS ISSUED.

No. 1, dated 190 .

" 2 "

" 3 "

" 4 "

" 5 "

KEEP-WITHS.

FURTHER PAPERS.

No.	Date.

No. 184 Irr of 24-6

To,

The Manager,

The South Indian Export Co.

Madras.

Sir,

– With reference to Correspondence ending with your letter dated 11th June I have the honour to inform you that in the Case of the Elevator proposed to be tried on the Periyar main Canal the fall is available in a total length of 100 ft.

[illegible]

24/6/02

R97 ... /02

Public Works (1902) Department

(IRRIGATION BRANCH)

No. 1589 ... 24-6

CURRENT No.

To,

The Manager,

The South Indian Export Co.

Madras.

Sir,

S. I. Export Co.

With reference to correspondence ending with your letter dated 11th June I have the honour to inform you that in the case of the [illegible] proposed to be tried on the Periyar main canal the fall is available in a total length of 100 ft.

[illegible]

[illegible] ... for [illegible] the information in connection with the — to their [illegible] of five 100 ft. Complete specification [illegible]

2

18

F. L. 1,000—19-3-02.

Public Works (1902) Department

(IRRIGATION BRANCH.)

CURRENT No. 317. m.

From

[Name]

[Designation] The S. I. Export Co

[Station] Madras

No.

Dated 30. 6. 1902

Received 1. 7. 1902

Registered 1. 7. 1902

Enclosures { Plans / Others } Total

Spare copies

SUBJECT.

Syphon Elevator — informing that they will forward the information in connection with the — to their London office & obtain complete specifications required

BACK PAPERS.

9184 m/02 with 303 m/02 & previous papers	Papers. M.E.I. Please say if these be sent to Colln. Clerk to put up with the file
Sent to D.S.D. on 1-7-02	2-7-02

FURTHER PAPERS.

R 37-P. 23-7-02	1-7-02

The South Indian Export Company Limited.

Address for Telegrams
Kebco.
Madras.

Madras 30th. June. 1902.

The Ag. Chief Engineer for Irrigation,

Madras.

Sir,

We have to acknowledge receipt of your letter No. 184 M, dated the 24th inst. for which we are much obliged. We will forward the information to our London Office and will we trust obtain complete Specifications required at an early date.

We have the honour to be,

Sir,

Your obedient servants,

THE SOUTH INDIAN EXPORT Co.,Ld.

[signature]

Ag. Manager.

R.S.

CHIEF ENGINEER
FOR IRRIGATION.
1 - JUL. 1902
No. 317/44

CHIEF ENGINEER
FOR IRRIGATION.
- JUL. 1902
No.

25/9/03

Stock Form No.
3,000—7-4-02.

Public Works (190) Department.

CURRENT No. 47 I

From

[Name] W. O. De Morgan Esquire M.I.C.E.

[Designation] Superintending Engineer Circle

[Station] Nowshera

No. 1284 G.L.

Dated 20 November 1902.

Enclosures { Plans / Others 1 } Total 1

Spare copies

Received } 24. 11. 02 190

Registered } 190

Passed on, by—

Registering Clerk 190 .

U. R. Clerk 190 .

Referencer 190 .

Record Supdt. 190 .

Drafting Officer 190 .

SUBJECT

Submits note on the Elevator which is proposed to try in Choffilleo Lock Weir

D.J. Please await return if the file is sent with you. — 7.12.02

BACK PAPERS.

R.K. wait till it returns 27.11.02

Papers ...

FURTHER PAPERS.

Ch. I am only this file

[V. C. P.—No. 248—9.1.1902.—500.]

Superintending Engineer's Office, I Circle,
Waltair / Camp 20 November 1902.

No. 1284 GL

From

W.C.De MORGAN Esquire, M.I.C.E.,
SUPERINTENDING ENGINEER,
FIRST CIRCLE.

To

THE CHIEF ENGINEER,
FOR IRRIGATION.

Enclosures.

Sir,

x Reg-V w R 638 4/02

With reference to your memorandum No.9-I/24-6-02, I have the honour to forward a note on the Elevator which it is proposed to try in Choppella Lock weir. This I think gives sufficient information to enable the agents to supply a suitable machine.

I think it will be sufficient for a commencement to try the Elevator in one place only.

I have the honour to be,

Sir,

Your most obedientservant,

20.11
W DeMorgan
SUPERINTENDING ENGINEER, I CIRCLE.

1/12/02

CHIEF ENGINEER
FOR IRRIGATION.
24 NOV. 1902
No. 47 I.

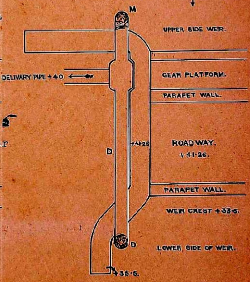
N O T E.

It is proposed to instal a Syphon Elevator in the right end of Choppella Lock weir to irrigate land which is available either just to the right of the weir inside the ~~B~~ flood bank which is irrigated during first crop season but which cannot be commanded during the second crop season or for irrigating land on the river side of the flood bank which is at present unirrigated and on which valuable crops could be grown such as tobacco.

The area available is many hundred acres but for the purpose of trial 40 acres with a duty of 40 is proposed.

The discharge required is therefore 1 cusec: or 540,000 gall per 24 hours.

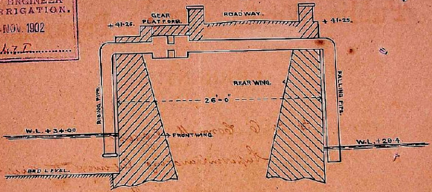
2. In the mragin is a sketch of the wing of Choppella lock weir. M is the ascending pipe. The water level above the weir varies from +37.5 to + 34 and below the weir the difference of level varies from 4 feet to 4.6 feet the greater difference of level being realized when water is lowest above the weir. The descending pipe is D.



The exact lengths of pipes required cannot be given without the exact dimensions of the apparatus (distributor and regulator) between flanges.

2. Bends will be required as below.
on the rising pipe one right angle bend on the falling

CHIEF ENGINEER
FOR IRRIGATION.
24 NOV. 1902
No. 47 I



A right angle bend as shown in the sketch -

The distance from face of front to rear wing is 26 feet (about)

3. The details required regarding rising and falling pipe cannot be exactly filled in as explained above but the Agent of the Company will no doubt be able to tender for installing a pump from the details given. If desired detailed drawings of the Choppella weir could be sent.

(1) Output of water supply = Practically without limit.

(2) Quantity of Water required - 540,000 gallons per 24 hours.

(3) Height to which water must be elevated viz from 34 to 40 = 6 feet.

(4) Differende of level.--- ---- 4½ feet.

(5) Height (M.N.) about --- 6 feet.

A cutting will be made in approach slope of Roadyway in which the elevator can be bedded.

(6) Height----------------------------3½ feet.

Sd/ W.M.Ellis, Major. R.E.,

Executive Engineer,

Godavary Eastern Division.

No.903-S of 14-11-02

To Supg: Engineer, 1 Circle, with reference to his No.1841-G.E dated 28-6-02.

Sd/ W.M.Ellis., Major. R.E.,
Exentice Engineer,
Godavary Eastern Dn.,

(True Copy)

[signature]

...ENDING ENGINEER, 1 CIRCLE.

Book Form No. 8,000—18-7-02.

Public Works (1902) Department.

CURRENT No. 28 · II

From

[Name] H. G. C. Cornell Esquire

[Designation] Superintending Engineer II circle

[Station] Bezwada

No. 2967

Dated 9th October 1902.

Enclosures { Plans / Others 1 } Total. 1

Spare copies

Received 13. 10. 190

Registered 13. 10. 190

Passed on, by—

Registering Clerk 190

U. R. Clerk 190

Referencer 190

Record Supdt. 190

Drafting Officer 190

SUBJECT

"Syphon elevators"

States that no —— are required in this circle and encloses copy of letter from Executive Engineer Kistna Eastern Divn. on the subject - for perusal -

To await replies from other circles

BACK PAPERS.

Papers 913 G/02	S.C.B. Please see if this is a paper intended for S.I. & replies to ... it to keep it. CW 11-10-02

FURTHER PAPERS.

13/10/02

To

The Chief Engineer / Secretary to Government, Public Works Department.

Sir,

Chief Engineer

Public Works Dep

[illegible]

Superintending Engineer's Office, II Cir

No. 2967/ BEZWADA, 9th October 1902.

FROM

Hugh O'Connell Esquire.

SUPERINTENDING ENGINEER,

II CIRCLE,

TO

THE Chief Engineer,
Public Works Depar

SIR,

Enclosures. 1

With reference to your No. 13 G dated 25 April '02, I have the honor to state that no syphon elevators are required in this Circle.

I enclose for perusal letter from Executive Engineer Kistna Eastern Division on the subject. The Executive Engineer is wrong in saying the water expended in raising would go to waste as it could be returned to the canal below but the machine is a costly one and would only raise 2 C.ft. per sec. There is also the doubt whether the clack-valve would work properly when raising water containing silt.

I have the honor to be,
Sir,
Your most obedient Servant,

W. J. Scott

For Superintending Engineer
2nd Circle

8/10/02

8 OCT 1902

R 28/11/02
13/10

8

1,000—30-7-01.

Public Works (1902) Department.

CURRENT No. 49 C.I.

From

[Name] Col: C.C. Rawson, R.E.,

[Designation] Superintending Engineer, IV Circle,

[Station] Coimbatore.

No. 14/G

Dated 7 June 1902.

Disp. 10/6/02 —

Enclosures { Plans — Others — } Total —

Spare copies —

Received 11. 6. 1902.

Registered 11. 6. 1902.

SUBJECT.

Syphon Elevator. Submits letter from the Ex. Engr., Coimbatore Dn., for favor of orders and with a recommendation that an estimate for a — shd. be sanctd. for trial below the head of the Pogalur &ca. channels.

BACK PAPERS.

Ask Exe Engr. [illegible] whether the syphon elevators [illegible] have [illegible] in stock in Madras.

[illegible] 24.7/02

Papers submitted for orders.

[illegible]

FURTHER PAPERS.

To

The Chief Engineer / Secretary to Government, Public Works Department. (Irrigation Branch)

Sir,

Letter from the Executive Engineer, Coimbatore Division to the Superintending Engineer, IV Circle, dated 2nd June 1902, No. 364.

With reference to your Endorsement No. $\frac{246}{C}$ dated 6th May 1902, I have the honour to inform you that suitable fields for the trial of the Syphon Elevator can be found a few miles below the head of the Rajaker, Vongal or Nerur Channels. These channels have a supply in them practically all the year round. They are river channels taking off the Cauvery, running close to it for several miles, and after a few miles of their courses their water-level is several feet above the water-level of the Cauvery, except on the rare occasions when the river is in very high flood.

Mr. A. Sundram Iyer of Kodumudi, a member of Coimbatore District Board and a considerable landholder, informs me that he would be willing to place some of his lands at disposal for experiment, and suggests some fields close by Kodumudi village for the purpose. The head here would seldom be less than from 6 to 8 feet. Mr. Sundram Iyer has also some land alongside one or more of the Salem Cauvery river channels where he says the condit[ions]

would

would be similarly suitable.

I would recommend that an Elevator specified, on a 6' lift & with 6" head, to deliver 60,000 gallons a day (= 2500 per hour) may be obtained and supplied.

I presume the Government will pay for the plant.

200 Running feet of descending pipe and 100 Running feet of super-elevation pipe should accompany

CHIEF ENGINEER FOR IRRIGATION, 11 JUN. 1902
49: C9

No 1491

Copy forwarded to the Chief Engineer for Irrigation for the favour of orders with reference to No 13.G dated 25 April 1902 and with a recommendation that an Estimate for a Syphon Elevator should be sanctioned for trial at the site indicated by the Executive Engineer.

Flag G

Camp Coonoor
7th June 1902

[signature] Col: RE,
Superintending Engineer,
IV Circle.

CRL

10,000—7-10-01.

20

Public Works (1902) Department.

CURRENT No. 37 V

From

[Name] C. J. Tasker Esquire

[Designation] Offg. Supdg. Engineer, 5 Circle,

[Station] Madras.

No. 291 S.I.	Received 26 7 1902
Dated 23rd July 1902	Registered 26 7 1902
Enclosures { Plans, Others } Total.	Passed on, by
	Registering Clerk 190 .
Spare copies	U. R. Clerk 190 .
	Referencer 190 .
	Record Supdt. 190 .
	Drafting Officer 190 .

SUBJECT.

Syphon Elevator - Reports that he does not know of any place suitable for the use of a — for irrigation

BACK PAPERS.

913 G/02

FURTHER PAPERS.

Recorded
[illegible] 28/7/02
R/ 24-7-02

Public Works (1902) Department

CHIEF ENGINEER FOR IRRIGATION. 24 JUL 1902 No.

To

The ~~Secretary to Government~~ Chief Engineer, Public Works Department for Irrigation

Sir,

With reference to your endorsement No. 13 G dated 26th April 1902, I have the honour to report that I do not know of any place suitable for the use of a syphon elevator for irrigation. The Executive Engineer, Tanjore Division, who was consulted in the matter is unable to suggest any place in his Division.

I have the honour to be,

Sir,

Your most obedient servant,

[signature]

Offg Supdg Engineer,

V Circle.

3,000—21-1-01.

Public Works (1902) Department.

CURRENT No. 89 M.D.

From

[Name] F. J. Wilson Esqre.

[Designation] Offg. Supdg. Engineer, 6th Circle

[Station] Trichinopoly.

No. 780-M.D. *Received* 3-6 1902.

Dated 31st May 1902. *Registered* 3-6 1902.

Enclosures { *Plans* – / *Others* – } *Total* –

Spare copies ——

SUBJECT.

Syphon water Elevator. Forwarding copy of letter from the Executive Engineer, Madura [illegible] Division, requesting to be supplied with one [illegible]

The C.E. should be asked to say what the cost of a syphon elevator he requires. [illegible] sanction [illegible] estimate [illegible]

BACK PAPERS.

To lie pending receipt of replies from [illegible]

FURTHER PAPERS.

[illegible] 6/6

[illegible] 6/6

[illegible] 3/5

To

The ~~Secretary to Government~~ Chief Engineer for Irrigation, Public Works Department.

Sir,

Letter from H. T. Keeling Esquire, Executive Engineer, Madura Division, to the Superintending Engineer, VI Circle, Trichinopoly, No. 329 SE dated 22nd May 1902.

In reply to your No. 923 T.C. circulating E.I. No. 13 G. of 25th April 1902, I have the honor to state that if one is sent to me I can make a trial of it to irrigate high level lands near the Main Canal of the Periyar Project. The use of it would save the cost of lowering the land, which is often done up to a depth of 6 feet, and if the suitability of the contrivance is demonstrated, I have no doubt that the ryots will contribute towards the cost after the suitability is demonstrated. An estimate to defray the prime cost of one to discharge enough to irrigate 25 acres with a difference in

1.25

$\frac{2}{3}$ cusecs

= 2 gallons per second

per day

1,728,000 gallons

in head of deficit may be framed and sanctioned in the Chief Engineer's office, and the elevator sent to me.

No. 780-MD of 31st May 1902 Office

Copy submitted to the Chief Engineer for Irrigation with reference to his No. 13-G. dated 25th April 1902 with a recommendation that a trial might be made as suggested.

No 2 in the current file

CHIEF ENGINEER FOR IRRIGATION. 3 JUN. 1902 No. 89

[signature]

Offg. Supdg. Engineer VI Circle

[signature]

OWE 23 7/12/03

From W. J. J. Howley Esq. A.M.I.C.E., Executive Engineer Kistna Eastern Division to the Superintending Engineer 2nd Circle dt. 7/3-10-02 No. 4085

In reply your Cir. No. 75 Estb., dated 3-5-02 I have the honor to report that I do not know of any site in this Division where a "Syphon Elevator" could be used with advantage.

2. The pamphlet gives no information as to the size or cost of the different elevators, and though it gives an imposing table of discharges for a No. 11 elevator for different lifts, the discharges are quoted in gallons without any information as to whether it is gallons per day or gallons per hour.

3. I have, however, recently ascertained that the table of discharges is for gallons per day of 24 hours. I also find that the price of a No 7 elevator, free on rail Madras, is Rs 2000/-; and of a No 8, the largest size for which a price is quoted, except on special application, Rs 3000/. From these prices it would appear that a No. 11 elevator (the largest size) would cost perhaps Rs 10,000/- at Madras.

4. Now as to the discharge that is said to be obtainable from the No. 11 (or largest size)

[illegible]

[E. I. / 4] 4,000—22-11-00.

27/A

Public Works (190) Department

(IRRIGATION BRANCH.)

CURRENT No. 507 Irr.

From

[Name]—

[Designation] The South Indian Export Co. Ltd.

[Station] Madras

No. —

Dated 1 – 9 — 1902.

Enclosures { *Plans* / *Others* } *Total* —

Spare copies —

Received 3 – 9 — 1902

Registered 3 – 9 — 02 190

SUBJECT.

Syphon Elevator — Forwarding an estimate with Specification for a —

E.E.W. – to report with reference to previous correspondence whether (& may be [illegible] Madras) E.E. can put up three syphon elevators in a [illegible] all as proposed and whether there is the land available to irrigate [illegible]

Initialled 3/9/02

BACK PAPERS.

E.I. The previous papers will be called for from the Madras office

Initialled 3.9.02

[illegible] – I believe this is the Madras case

Initialled 3/9/02

FURTHER PAPERS.

[illegible] 4-9-02

E.I. / 460 [illegible] 5.9.02

The South Indian Export Company, Limited.

Address for Telegrams,
Xebec.
Madras.

Madras 1st. Septe[m] ... 9

The Chief Engineer for Irrigation,

O o t a c a m u n d.

Sir,

With reference to your letter No.162 M, dated the 7th. of June asking us to forward an estimate with Specification for a Syphon - Elevator we beg to hand you herewith the following Specification - and Estimate:-

Data given.

Height to which water is to be elevated.	10ft.
Available Fall ------------------------	6 ft.
Quantity of water required in 24 hours.	200,000 Gallons.
-Supply unlimited.	
Distance over which the available fall is spread.------------------------------------ }	100ft.

We recommend the use of 3 No.7 Syphon Elevators for this work. - Under the foregoing conditions if properly worked and regulated each apparatus should deliver about 67,000 gallons in 24 hours and use as motive power (i.e., the water passing down the descending pipe) about 156,000 gallons.

We would suggest that the installation be made in such a manner - as to allow of a vertical fall. This can be accomplished in two ways.

First. By erecting the apparatus at the point, about 100 ft. from the Canal, where the lowest level is found, using a Reservoir (connected with a canal by a pipe) placed at that point as the source of supply for the apparatus.

Second. By erecting the Syphon Elevators on the bank of the Canal and digging a trench from the point referred to in No.1, to carry off the water from the descending pipe. In this case it may not be practicable to obtain quite a vertical fall, but the descending pipe would only run a very short distance.

Either arrangement would not only eliminate the risk of leakage of air in the numerous joints that would be necessary in a considerable length of pipe but would be much more economical in pipe.

Such an installation would cost as follows:-

3. No.7 Syphon Elevators.

3. 10ft. Lengths of best lap-welded W.I.Tubes 8 inches diameter fitted with doubly secured flange joints, - with bolts & nuts.

3. Full-way quick opening valves, with sliding stem and lever.

The apparatus complete delivered in Madras. Rs.6000/-.

This, you will notice, does not include the descending pipe as we should require to know upon which system you would prefer to install the apparatus so that we could calculate the exact length of pipe required. The pipe however would be of 5 inch diameter and would not cost very much.

We trust you will see your way to pass us an order for these 3 -

Machines so that they may be erected at an early date and their efficiency and usefulness prove to you in a practical manner. In erecting the Machines no very substantial foundation is required but we would supply working drawings of the machines so that the apparatus can be properly erected and we would also be glad to give every assistance in our power to see that the apparatus is erected and regulated properly.

Trusting to hear that the purchase of these machines has been sanctioned by Government at an early date.

We have the honour to be,

Sir,

Your obedient servants,

THE SOUTH INDIAN EXPORT Co.,Ld.

R. Simson

Dy.Manager.

R 507/24/02

113 22

Public Works (1902) Department

IRRIGATION BRANCH.

ISSUE No. 8040-D
47

To
The Supg Engineer Ca

(Reply to letter No. , dated)

Dated 4. 9. 02
Despatched 6 do.
Enclosures *

* Particulars of Enclosures.

SUBJECT.

Syphon Elevators. Forwards Copy of letter from the S. I. Engr. Co. with a request to report, whether the S.E. Madura Dn. can put up the three — with a vertical fall as proposed and where there is land available to irrigate close by

J. R.C.
Please enter these papers in the Outward Register & send them to Supg. E. today - [illegible]
6/9/02

E. I. Form No. 13—4,000— 9-3-02.

BACK PAPERS.

No.	Date.
R 89. Recd.	3.6.02 ([illegible] VI)
R 97 Recd.	21.6.02 ([illegible])

Sent to Government with No. I., dated 190 .

Printed with G.O., No. I., dated 190 .

REMINDERS ISSUED.

No. 1,	dated	190 .
,, 2	,,	
,, 3	,,	
,, 4	,,	
,, 5	,,	

KEEP-WITHS.

FURTHER PAPERS.

No.	Date.

PUBLIC WORKS DEPARTMENT,

IRRIGATION BRANCH.

Letter from the South Indian Export Company, limited, dy 1st Septr 1902 No 80 M.D. 974 S.02

Copy forwarded to the Supdg. Engineer, 6th Circle, with a request that he will be so good as to report, with reference to previous correspondence ending with his No. 780 M.D. dy 31-5-02 whether the Executive Engineer, Madura division, can put up the three syphon elevators with a vertical fall as proposed, and whether there is land available to irrigate close by

4/9/02

3.9.02

With fair to E.D.

Hence despatch fair & return file to me at once 6/9

Returned 6/9

SCB

After despatch of copy please return the file to Broly today so that it may be put up with the papers taken up to Broly by the D.S. 6/9

x To be filled in by the Madras office from the R. Register.

attended to 6/9

Papers on the subject were sent to Broly yesterday - Kindly have these also put up with them. 6/9

M.G. in the current file

Stating that it is reported that the ... [illegible] can be supplied to ... with a vertical fall ...

of 3 metres (9.84 ft) a discharge of 10,29,600 gallons per day can be raised to a height of 2 to 3 metres (6.56 to 9.84 feet) by an expenditure to waste of 9,16,128 gallons per day. The discharge is not likely to be underestimated by the makers; and at its best, for the largest size elevator, with a working fall of nearly 10 feet, it only amounts to 12 gallons per second, or under 2 c.ft. per second raised a height of from 6½ to 9¾ ft. with a wastage of very nearly as much water as is lifted.

[illegible] 8/10/[illegible]

1 28 II / 02
/ 1

Public Works (1907) Department

CURRENT No.

F. J. Wilson Esq

1321 M.P.

17 Sept.

SUBJECT

3000—31-1-02.

Public Works (1902) Department.

CURRENT No.

From [Name] F. J. Wilson Esquire,

[Designation] Superintending Engineer, 6th Circle,

[Station] Trichinopoly.

No. 1321 M.B.

Dated 17 Sept. 1902.

Enclosures { Plans / Others } Total —

Spare copies

Received 190 .

Registered 190 .

SUBJECT.

Syphon Water Elevators.

Stating that this reported that either System A or B (1 or 2) can be adopted in putting up the — with a vertical fall & that there is land & irrigable

BACK PAPERS.

FURTHER PAPERS.

CHIEF ENGINEER
FOR IRRIGATION.
10 SEP 1902
No. 142. Ind

Public Works (1902) Department

Irrigation Branch

To

The ~~Secretary to Government~~ Chief Engineer Public Works Department
for Irrigation.

Sir,

N-22. in the current file. [illegible]

With reference to your No. 80. M.D. dated 4th September 1902, I have the honor to state that Mr. Keeling reports that either System A or B can be adopted and that there is land to irrigate.

I have the honor to be,
Sir,
Your most obedient Servant,

[illegible signature]
Superintending Engineer,
IX Circle.

[illegible initials]

L 507 [illegible]/02

[illegible] 26
7/9/03

/ 2

[E. 1. / 6] 1,000—19-3-02.

Public Works (1902) Department

(IRRIGATION BRANCH.)

CURRENT No. 638. m

From

[Name]

[Designation] The South Indian Export Co.

[Station] Madras.

No.

Received 6. 11. 1902

Dated 5. 11. 1902

Registered 6. 11. 1902

Enclosures { Plans / Others } Total

Spare copies

SUBJECT.

Syphon Elevator — reqt. to expedite the sanction of the trial installation of the —

BACK PAPERS.

R 507 m/02

C. E. ?

6/11/02

FURTHER PAPERS.

7/11

6/11/02

The South Indian Export Company Limited.

Address for Telegrams
Xebec.
Madras.

Madras 5th. November.1902

The Chief Engineer for Irrigation,

<u>Madras.</u>

Sir,

With reference to our letter dated 1st. September.1902, giving you an estimate for the installation of a Syphon Elevator we have heard no further on the subject and we shall be glad to know whether the installation of this machine as a trial has yet been sanctioned. As our London friends have been to some trouble in this matter in preparing plans and estimates for the exact installation and wish to know whether they may make final working drawings of the Machines required for the installation, We shall be glad if you can hasten the sanction of the trial installation.

We have the honour to be,

Sir,

Your obedient servants,

THE SOUTH INDIAN EXPORT Co.,Ld.

R. Seimon

Dy.Manager.

CHIEF ENGINEER
FOR IRRIGATION.
6th NOV. 1902
No. ....

As regards the purcha[se]
of a Syphon Elevator whi[ch]
is proposed to try at the ...
Main channel, the ...
... cost has to be ...
the sanction of the ...
... proposal ...
of the Govt of India ...
intimated that the ...
the ...
the ...
work ...
As the ...

R47I

PUBLIC WORKS DEPARTMENT,
IRRIGATION BRANCH.

D.S.

As regards the purchase of a Syphon Elevator which it is proposed to try at the Periyar main channel, the incidence of its cost has to be settled. The estimate for it cannot be sanctioned against the open Capital Account of the Periyar project owing to the existing restrictive orders of the Govt. of India. It is submitted that the amount of the estimate may be met from the reserve for Experimental well irrigation – Class V. Agl. Works. As the Experiment proposed to be made is in the interests of agriculture, the Commissioners cannot possibly have any objection to such a debit.

For orders

[margin note, left edge torn:]
...s the elevator is said
...be adaptable to wells
...of the Experiment proves
...success the elevator
...could be used in raising
...the [illegible] wells, the charge
...may ~~well~~ fitly stand against

M.S.S.
22/12/90

[illegible initials]

3

REVENUE DEPT. ... 1903

D.I.

As in the draft G.O. below, a reappropriation is proposed from the reserve at the disposal of this Branch for experimental well irrigation, for which an allotment of Rs. 20000 was made from the special grant of 14 lakhs (vide G.O. No. 892-I dated 4 Aug '02), it is submitted that the draft may be sent U.O. to Financial for acceptance.

As the subject dealt with in the G.O. is of interest to Revenue, the draft may also be forwarded to that dept. before issue.

[illegible] 23/12/02

[illegible] 23/12/02

Approved
[illegible] 24/12/02

CHIEF SECRETARY
27 DEC 1902
GOVERNMENT OF MADRAS

Inquiries 213 D
24-12-02

Financial DEPT.
U.O. No. 1307 R
Dated 27.12.1902

FINANCIAL DEPARTMENT

For the C.S.

It is submitted that the draft order may be accepted.

T.H.A. 30/12/02 Cml. 31.XII.02

accepted. [illegible] 31/12/02

P.W. D. [illegible]

P.T.O.

No. 4 (6)—400—12-7-02.

[illegible] 28/12/02

10,000—7-10-01.

19

Public Works (1902) Department.

CURRENT No. 36 III

From

[Name] Colonel W. L. C. Baddeley R.E.

[Designation] Supdg. Engineer, III Circle,

[Station] Bellary.

No. 2173 I

Dated 1st July 1902

Enclosures {Plans ..., Others ...} Total ...

Spare copies ...

Received 3-7-1902.

Registered 7-7-1902.

Passed on, by

Registering Clerk ... 190 .

U. R. Clerk ... 190 .

Referencer ... 190 .

Record Supdt. ... 190 .

Drafting Officer ... 190 .

SUBJECT.

Syphon Elevator – Informing that it is too soon to expect reports about the –

BACK PAPERS.

	Record

FURTHER PAPERS.

R. 37. v. § 23. 7. 02

Revenue Dept

To Under Secy

Submitted that there appears to be no objection to the acceptance of the draft order in this Dept. ~~The use~~ of the Syphon elevator is to be tried only as an experiment. It will be noted that no Revenue officer has been consulted in the matter.

No: but the proposed trial is only to test the mechanical efficiency of the Elevator.

[illegible] 13-1-03 [illegible] 13-1-03

The draft is accepted

[illegible] 14/1/03

[illegible]

CHIEF ENGINEER FOR IRRIGATION.
19 JAN. 1903
No. 3 [illegible]

Urgent H. E. the Governor

Public Works Department,

Irrigation Branch.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Estimate of Rs 3100 for purchasing a Syphon Elevator pump and cost of its installation for its trial

Under date the

Read the following

From the Ag. Manager, South Indian Export Co., Ltd., dated 25-3-02.
From ---------------do-------------do------------dated 22-4-02.
To Superintending Engineers, dated 25--4--02, No.13 C.
From the Ag. Manager, South Indian Export Co., Ltd., dated 2-5-02.
To ---------------do-------------do----------- dated 7-6-02 No.162 M.
From ---------------do-------------do----------- dated 11-6-02.
To ---------------do-------------do----------- dated 13-6-02 No.175 M.
From the Supg. Engineer, I Circle, dated 16-6-02 No.710 G.L.
From the Ag. Manager, South Indian Export Co., Ltd., dated 17-6-02.
From ---------------do-------------do----------- dated 23-6-02.
To the Superintending Engineer, I Circle, dated 24-6-02, No.9-I.
To the Ag. Manager, South Indian Export Co., Ltd., dated 24-6-02 No.184 M.
From ---------------do-------------do----------- dated 30-6-02.
From the Superintending Engineer, I Circle, dated 20-11-02 No.1284 G.L.
From ---------------do-----------II Circle, dated 9-10-02 No.296 W.
From ---------------do----------- III Circle, dated 1-7-02 No.2173 I.
From ---------------do-------------do--------- dated 13-9-02 No.3113 I.
From ---------------do----------- IV Circle, dated 7-6-02 No.141 I.
From ---------------do----------- V Circle, dated 23-7-02 No.291 E.I.
From ---------------do----------- VI Circle, dated 31-5-02 No.780 M.D.
From the Ag. Manager, South Indian Export Co., Ltd., dated 1-9-02.
To the Superintending Engineer, VI Circle, dated 4-9-02 No.80 M D.
From ---------------do------------------- dated 17-9-02 No.1321 M.D.
From the Ag. Manager, South Indian Export Co., Ltd., dated 5-11-02.

Print first

Note by the Chief Engineer for Irrigation. No 6.3 22.1.03

To The Irrt Dept / " Rev Dept

A large extent of high level lands by the sides of several streams

and channels, in which a continuous and unlimited supply is available, is at present lying waste in patches for want of economical means of raising water for its irrigation. It is considered that the method of raising water by means of "Syphon Elevators" given in the pamphlet received from the South Indian Export Co., Limited, is simple and suitable for the purpose & it is proposed to give the system a trial. The pamphlet having been circulated to Superintending Engineers for an expression of their opinion, the Supg. Engineers, I, IV & VI Circles, recommend a trial of the machine at certain sites. The Supg. Engineer, II Circle, is not in favour of a trial and states that the machine is costly and that it is doubtful whether the clack valve provided in it would work properly when raising silt - laden water. The Supg. Engineer, III Circle, is of opinion that there is no reasonable probability of carrying out irrigation with profit by any of these machines in his Circle. The Supg. Engineer, V Circle, is unable to suggest any suitable place where the machine can be tried. It is, however, proposed to make a trial at first near the Periyar Main channel only, in order to raise water to a height of 10 ft with a gradual fall of 6 ft in a distance of from 100 to 200 ft, as it is considered that it will save the cost of lowering the high level lands and that the ryots themselves will contribute towards the

C F P R M O Q

cost of the machine after its usefulness has been demonstrated.

The Syphon Elevator No.7 is capable of delivering about 10720 cubic feet or 67,000 gallons of water in 24 hours, which is sufficient to irrigate a small block of about 10 acres of land. The estimate amounting to Rs 3,100 for the trial of the machine with its apparatus including descending and superelevation pipes is recommended for sanction as an experiment, the amount being met from the reserve at the disposal of Government for experimental well irrigation.

G.O. No. 973 I. d/ 20th August 1902 D

Order thereon. No. 74 I. d/ 27 Jany: 1903.

The following estimate is sanctioned:-

Provincial.

Irrigation.

43 Minor Works and Navigation.

Class V-(Agricultural) Works.

Original Works.

Madura Division.

Purchasing a Syphon Elevator No.7 and cost of its installation for its trial. -------------------- Rs 3,100.

2. This sanction is registered as No. 209 I of 1902-03.

3. A sum of Rs 3,100 will be placed at the disposal of the Supg. Engineer, VI Circle, from the reserve for experimental well irrigation to meet the cost of the experiment.

20-1-03

Note

Please let me have early intimation of the result of the experiment

20-1-03

DESPATCHED 20 FEB. 1903

To

All Supg. Engineers.
The Chief Engr. for Irrign.
,, Examiner, P.W. Accounts.
,, Revenue Department.
Financial Department.

P.T.O.

4. The Supdg: Engr, 1st Circle, will give an early intimation of the result of the experiment for the information of Govt.

Issue

[initials] 22/11/13 — Init. 22/11/13 — Init. 22/11/13

ESTIMATE FORM.—Abstract.

Quantity.	Description of Work.	Rate.	Per	Amount	TOTAL.
1	2	3	4	5	6
		RS.		RS.	RS.
	Estimate for Syphon Elevator to raise water to a height of 10 ft with an available fall of 6 ft.				
	No 7 Syphon Elevator with 10 ft length of best lap welded W. I. tubes 8" diameter fitted with doubly secured flange joints with bolts & nuts complete delivered in Madras	"	"	2,000	
300	Rft of descending and super elevation pipes (descending pipes 200 Rft + super elevation 100 Rft) cast iron internal diameter	1-12-	Rft	525	
	For bends of pipes where necessary			75	
	Railway charges, conveyance charges &c for the above from Madras to the work spot including loading & unloading			150	
	Masonry work ~~including~~ for fitting the machine including digging trench &c			200	
	Fitting charges			50	
	Contingencies			50	
	Supervision			50	
					31,00
	Sanctioned in G.O. no 74 dd 27.1.034 registered as No. 209 of 1902-03				
				Grand Total of Estimate ..	3,100

[signature]

STATION.—

Date, —— 190

J. R. Khanyal.

for Chief ~~Executive~~ Engineer.

(E. No. 123.)

50,000—21-10-00.

CIRCLE—

DIVISION—

DISTRICT—

TALUK (OR ESTATE IN CASE OF ESTATE WORKS).

ESTIMATE FORM.—Abstract.

Financial Head—

Budget Head—

Departmental Head—

Main Head—

Sub-Head—

Project of which the work forms part—

Section—

Name of Work—

Amount of Estimate, Rs.

To be carried out by—

REFERENCES.

H.C.
P.S.

Please have a copy of this G.O. issued to the Supdt. Surg. VI in M.F.S. so that he may arrange to spend the funds placed at his disposal.

[illegible]
27/1/03

C. S.

I think the estimate ought to go to S. S. VI and if so please attach the Est. to the fair copy.

[illegible]

30-1-03.

Fed
~~S.E.B.~~

Please answer the above question

C.S.

[illegible]

There are no 30/1/03
others to go with
this copy to S.S. VI

[illegible] 30/1/03

[illegible]

38

7 JUL 1902
No..........

To

The ~~Secretary to Government~~ Chief Engineer for Irrigation, Public Works Department.

Ootacamund.

Sir,

With reference to your reminder, dated 27th June 02, Flag G to your Endorsement No. 13 G, dated 25th April 02, I have the honor to inform you that it is too soon to expect reports about the Syphon Elevator.

2. The pamphlet was received on the 1st May 02 and circulated to Divisional officers on 9th May 02 for information, and report where they could erect one or more of the machines on trial. The Executive Engineers have had no time to submit the report called for, as their time and that of their Subordinates is fully occupied in starting works.

I have the honor to be,

Sir,

Your most obedient Servant,

[signature] Col. R.E.,

Superintending Engineer III Circle

30.6.02

Recd 9/7 792/02

10,000—7-10-01. 23

Public Works (1902) Department.

CURRENT No. 49 iii

From

[Name] Colonel W. L. C. Baddeley R.E.

[Designation] Superintending Engineer

[Station] III Circle Bellary.

No. 3113 I	Received 16 9 1902
Dated 13 September 1902	Registered 16 9 1902
Enclosures {Plans, Others} Total. nil	Passed on, by
Spare copies —	Registering Clerk 190 .
	U. R. Clerk 190 .
	Referencer 190 .
	Record Supdt. 190 .
	Drafting Officer 190 .

SUBJECT.

Syphon Elevator — Expressing the opinions of the Divisional officers ~~on the~~ to make use of the ~~the~~ SE opines that there is no probability of the — being used with advantage in this Circle —.

BACK PAPERS.

I 13 9/02	D.E.I.
	Note Reply from SE II Circle not yet recd. Reminder sent on 20/8/02

RA

FURTHER PAPERS.

L. O.	Await
... 22/9	Just 20/1/02
	... 17/9/02
	SC... RA 22/8/... 17-9-02

To

The Chief Engineer for Irrigation, / Secretary to Government, Public Works Department.

Sir,

In reference to your No. 13.G. of 25th April 1902, I have the honour to inform you that the pamphlet has been seen by all the Divisional officers of this Circle.—

2. No one has yet found time to make a practical trial of the machine. The Executive Engineer, Bellary Division reported in July ~~last~~ that he was in correspondence with an agent at Madras in view to erecting a Syphon elevator at the head of one of the Tungabhadra channels. I am doubtful whether the pressure of ordinary work will give him time for experiments, as I have today received the orders regarding an additional grant of Rs 25602 to be spent in the Bellary Division within this year. I need scarcely point out that half the working year has already expired.

1249.P.W. 8-9-02 Flag C

3. Mr. Lambert observes that the Syphon elevator would be of little practical use in the Cuddapah District, as the supply in the river and

and channels is not sufficiently constant, and in the tanks the supply is hardly enough for the ayakat under them. These remarks apply equally to the whole of the Deccan districts, where the difficulty is to find water for the land already commanded.

4. The principle of the machine is that of the hydraulic ram. The waste of water is of course enormous, and an essential condition, if the machine is to be practically useful, is that the waste water shall be utilised. In my opinion there is no reasonable probability that irrigation could be carried on, at a profit, by one of these machines, under any known conditions in this circle.

I have the honour to be,
Sir,
Your most obedient Servant
W. C. Baddeley Col. R.E.
13.9.02
Superintending Engineer
III Circle

4/12.9.02

R 49. 111
16. 9. 02